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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/593,870      | 07/31/2007  | Kun'ichi Miyazawa    | 2006_1609A          | 4399             |

513 7590 01/18/2012  
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| EXAMINER |
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MCCRACKEN, DANIEL

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1736

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|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

01/18/2012

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
coa@wenderoth.com

## Office Action Summary

Application No.

10/593,870

Applicant(s)

MIYAZAWA ET AL.

Examiner

DANIEL C. MCCracken

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 18-28 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 25-28 is/are allowed.
- 7) ☒ Claim(s) 18-24 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

Citation to the Specification will be in the following format: (S. # : ¶/L) where # denotes the page number and ¶/L denotes the paragraph number or line number. Citation to patent literature will be in the form (Inventor # : LL) where # is the column number and LL is the line number. Citation to the pre-grant publication literature will be in the following format (Inventor # : ¶) where # denotes the page number and ¶ denotes the paragraph number.

#### ***Status of Application***

The response dated 9/23/2011 has been received and will be entered. Claims 18-28 are pending. Claim 25 is currently amended. Claims 1-17 are acknowledged as cancelled.

#### ***Response to Arguments***

##### **Claim Rejections – 35 U.S.C. §112**

I. With respect to the rejection of Claims 25-28 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, the traversal relies on amendments deleting the “room temperature” language. (Remarks of 9/23/2011 at 4). This is persuasive. The rejection is WITHDRAWN.

##### **Claim Rejections – 35 U.S.C. §103**

I. With respect to the rejection of Claims 11, 14, 16 and 22-24 under 35 U.S.C. 103(a) as being unpatentable over US 2002/0192143 to Miyazawa, et al. in view of Fagan, et al., *Metal Complexes of Buckminsterfullerene (C<sub>60</sub>)*, Acc. Chem. Res. 1992; 25: 134-142 (hereinafter

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“Fagan at \_\_”), cancellation of Claims 11, 14 and 16 moots the rejection of those claims. As to the rejection of Claims 22-24, the traversal is on the grounds that the combination does not teach or suggest the “amorphous structure” as claimed. Specifically, the Remarks advance the position that Miyazawa teaches “needle-like single crystals” and “needle-like polycrystals” and not the “amorphous structure” as claimed. (Remarks of 9/23/2011 at 5). On reconsideration, this is persuasive. The rejection is WITHDRAWN, but new rejections appear *infra*.

**II.** With respect to the rejection of Claims 25-28 under 35 U.S.C. 103(a) as being unpatentable over US 2002/0192143 to Miyazawa, et al. and Fagan, et al., *Metal Complexes of Buckminsterfullerene (C<sub>60</sub>)*, Acc. Chem. Res. 1992; 25: 134-142 as applied to claims 17-18 above, and further in view of US 7,291,318 to Sakurabayashi, et al., the traversal relies on the change to the transitional phrase. (Remarks of 9/23/2011 at 5). In light of the closed transitional phrase, the rejection is WITHDRAWN.

#### Allowable Subject Matter

The indicated allowability of claims 18-21 is WITHDRAWN in view of the reference(s) to Miyazawa, et al. filed with the response of 8/23/2010, but not formally submitted for consideration. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

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**I. Claim 24 is rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.**

Claim 24 recites “closed or open,” *i.e.* all possibilities for the “end” of the fullerene needle. Stated differently it fails to limit Claim 22. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**I. Claims 18-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Miyazawa, et al., *Transmission electron microscopy investigation of tubular and capsular needlelike crystals of C<sub>60</sub> produced by the liquid-liquid interfacial precipitation method*, J. Mater. Res. 2004; 19(11): 3145-3148 (hereinafter “M1 at \_\_\_”).**

Note that five inventors listed on the oath of the instant application and are presumed to be inventors of all of the claimed subject matter. Only two of the inventors are listed on the Miyazawa document. Stated differently, the “inventive entity” is different than the authorship of the reference. *See* MPEP 2132 III. Note also that this is an intervening reference between the foreign priority documents and the international application and would not be prior art under 35

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U.S.C. 102(a) if foreign priority were perfected with the requisite translations. *See e.g.* MPEP 706.02(b).

With respect to Claim 18, this claim requires “(1) a step in which a solution containing a first solvent dissolving the C<sub>60</sub> platinum derivative and the C<sub>60</sub> fullerene molecules therein, wherein the amount of the C<sub>60</sub> platinum derivative to be added is in the range of 1-10 mass % for the C<sub>60</sub> fullerene molecules, is combined with an alcohol as a second solvent.” M1 teaches the treatment with a platinum derivative. (M1 at 3145, col. 2).

Claim 18 further requires “(2) a step in which a liquid-liquid interface is formed between the solution and the second solvent; and (3) a step in which a carbon fine wire is precipitated on the liquid-liquid interface.” Precipitates form. *Id.*

Claim 18 further requires, in the preamble, “a needle crystal comprising a C<sub>60</sub> platinum derivative and C<sub>60</sub> fullerene molecules that is single crystalline and having a hollow structural portion.” To the extent these features are to be construed as limiting, they are taught. (M1 at 3146).

As to Claim 19, *see* (M1 at 3145).

As to Claim 20, *see Id.*

As to Claim 21, IPA is taught. *Id.*

**I. Claims 18-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Miyazawa, et al., *Transmission electron microscopy investigation of fullerene nanowhiskers and needle-like precipitates formed by using C<sub>60</sub> and ( $\eta^2$ -C<sub>60</sub>)Pt(PPh<sub>3</sub>)<sub>2</sub>*, J. Mater. Res. 2004; 19(8): 2410-2414 (hereinafter “M2 at \_\_\_”).**

Note that five inventors listed on the oath of the instant application and are presumed to be inventors of all of the claimed subject matter. Only two of the inventors are listed on the

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Miyazawa document. Stated differently, the “inventive entity” is different than the authorship of the reference. *See* MPEP 2132 III. Note also that this is an intervening reference between the foreign priority documents and the international application and would not be prior art under 35 U.S.C. 102(a) if foreign priority were perfected with the requisite translations. *See e.g.* MPEP 706.02(b).

With respect to Claim 18, this claim requires “(1) a step in which a solution containing a first solvent dissolving the C<sub>60</sub> platinum derivative and the C<sub>60</sub> fullerene molecules therein, wherein the amount of the C<sub>60</sub> platinum derivative to be added is in the range of 1-10 mass % for the C<sub>60</sub> fullerene molecules, is combined with an alcohol as a second solvent.” M2 teaches the process. (M2 at 2411, col. 1).

Claim 18 further requires “(2) a step in which a liquid-liquid interface is formed between the solution and the second solvent; and (3) a step in which a carbon fine wire is precipitated on the liquid-liquid interface.” The wires precipitate. *Id.*

Claim 18 further requires, in the preamble, “a needle crystal comprising a C<sub>60</sub> platinum derivative and C<sub>60</sub> fullerene molecules that is single crystalline and having a hollow structural portion.” To the extent these features are to be construed as limiting, they are taught. *Id.*

As to Claims 19-21, *see Id.*

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**I. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazawa, et al., *Transmission electron microscopy investigation of tubular and capsular***

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***needlelike crystals of C<sub>60</sub> produced by the liquid-liquid interfacial precipitation method, J. Mater. Res. 2004; 19(11): 3145-3148 (hereinafter "M1 at \_\_") in view of:***

**(i) Applicants' admissions.**

With respect to Claim 22, the needles are taught. (M1 at 3147). To the extent M1 *may* not teach the amorphous structure, this is the result of a known feature and the Examiner takes official notice that it is. In support of taking official notice, *i.e.* in making sure there is "substantial evidence" on the record, the Examiner provides the statement made by Applicants on and for the record, to the Office:

Further, Miyazawa, one of the present inventors, has discovered that thermal treatment of C<sub>60</sub> nanotube affords a fullerene shell tube having amorphous carbon wall (non-patent document 3; patent document 3).

As to Claim 23, hollow portions are taught. *Id.* As to Claim 24, ends are open/closed. *Id.*

**II. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazawa, et al., *Transmission electron microscopy investigation of fullerene nanowhiskers and needle-like precipitates formed by using C<sub>60</sub> and (η<sup>2</sup>-C<sub>60</sub>)Pt(PPh<sub>3</sub>)<sub>2</sub>, J. Mater. Res. 2004; 19(8): 2410-2414 (hereinafter "M2 at \_\_") in view of:***

**(i) Applicants' admissions.**

With respect to Claim 22, the needles are taught. (M2, entire document). To the extent M1 *may* not teach the amorphous structure, this is the result of a known feature and the Examiner takes official notice that it is. In support of taking official notice, *i.e.* in making sure there is "substantial evidence" on the record, the Examiner provides the statement made by Applicants on and for the record, to the Office:

Further, Miyazawa, one of the present inventors, has discovered that thermal treatment of C<sub>60</sub> nanotube affords a fullerene shell tube having amorphous carbon wall (non-patent document 3; patent document 3).



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Application of known techniques to known products to achieve predictable results does not impart patentability. MPEP 2143. As to Claim 23-24, *see e.g.* (M2 at 2412-2414).

***Allowable Subject Matter***

**I. Claims 25-28 are allowed.**

The search of the prior art did not teach or suggest the steps now required by the claims and their transitional phrase.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL C. MCCracken whose telephone number is (571)272-6537. The examiner can normally be reached on Monday through Friday, 9 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel C. McCracken/  
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